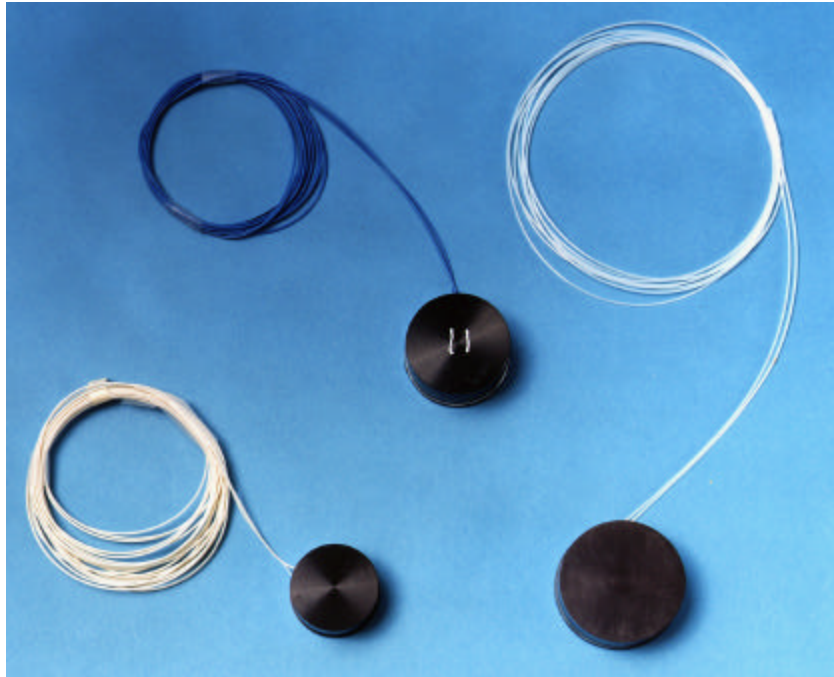


# FIBER OPTIC ACCELEROMETERS



The Naval Research Laboratory has developed compact, lightweight, highly sensitive interferometric fiber optic accelerometers that are suitable for multiplexing, allowing for distributed measurements. The sensors can be embedded in concrete or resin, or mounted on the surface of various structures including bridges, motors, ship hulls and decks, and aircraft. Fiber optic accelerometers have been extensively field tested by NRL on ships.

Features and advantages include:

- Low detection limit: 5-300 ng (-130 to -156 dB re  $g^2/Hz$ )
- Large dynamic range: >155 dB @ 100 Hz
- Broad frequency range of operation: 0.2 Hz to tens of KHz
- Low cross-axis sensitivity
- Insensitive to electromagnetic or acoustic interference.

Applications include:

- Seismology
- Inertial navigation
- Geophysical exploration
- Condition based maintenance of mechanical systems
- Structural health monitoring

Licenses are available to companies with commercial interest.

## *Points of Contact*

Naval Research Laboratory  
4555 Overlook Avenue, SW, Washington, DC 20375-5320

<http://techtransfer.nrl.navy.mil>

Jane F. Kuhl • Technology Transfer Office • (202) 767-3083 • [kuhl@utopia.nrl.navy.mil](mailto:kuhl@utopia.nrl.navy.mil)  
C. Kirkendall • Optical Sciences Division • (202) 767-1316 • [kirkendall@nrl.navy.mil](mailto:kirkendall@nrl.navy.mil)